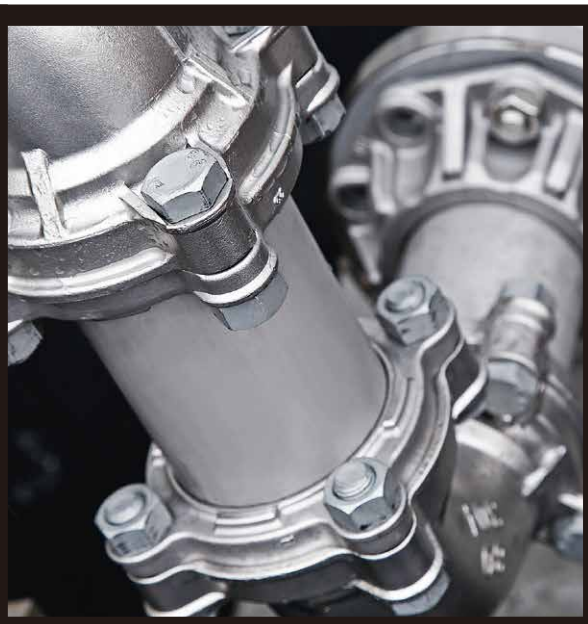


No.301902

Pipe Enlarging Type Fittings for Light Gauge Stainless Steel Pipes for Ordinary Piping

Approval No.32206 Approval No.32221

High-end piping

O.N. Fitting

MS JAB CM007

KHK MANAGEMENT SYSTEM ISO 9001 99QR・170 ISO 14001 06ER・598

O.N. Industries Ltd.

O.N. Fitting

◆About the acquisition of quality assurance system certification

(1) Acquisition of ISO 9001 certification

Registered No. 99QR 170　Nominal size 13 Su ~ 100 Su

(2) Acquisition of ISO 14001 certification

Registered No. 06ER 598

(3) Stainless Steel Association Standards Approval

Approval standards name

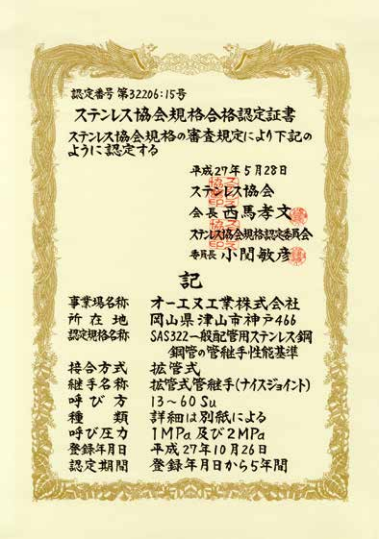
SAS 322 Standards for pipe fittings for light gauge stainless steel pipes for ordinary piping

Fitting name

Pipe enlarging type fittings (O.N.Fitting)

(4) Fire Equipment and Safety Center of Japan certification

PJ-164-1: O.N.Fitting (20 Su ~ 60 Su)
PJ-172: O.N.Fitting (75 Su ~ 100 Su)
PJ 171: Taper socket (65 A ~ 100 A)



認定番号 第32206:15号

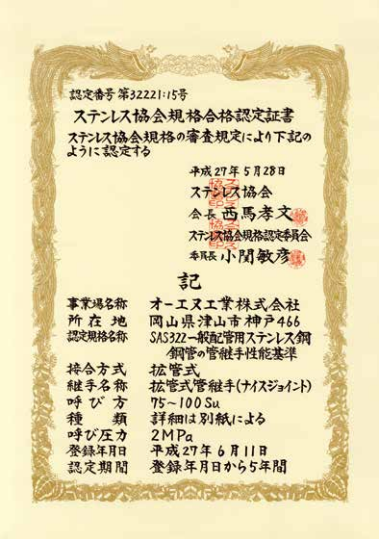
ステンレス協会規格合格認定証書

ステンレス協会規格の審査規定により下記のように認定する

平成27年5月28日
ステンレス協会
会長 西馬孝文
ステンレス協会規格認定委員会
委員長 小関敏彦

記

事業場名称　オーエヌエ業株式会社
所在地　岡山県津山市神戸466
認定規格名称　SAS322一般配管用ステンレス鋼鋼管の管継手性能基準
接合方式　拡管式
継手名称　拡管式管継手(ナイスジョイント)
呼び方　13～60 Su
種類　詳細は別紙による
呼び圧力　1MPa 及び 2MPa
登録年月日　平成27年10月26日
認定期間　登録年月日から5年間



認定番号 第32221:15号

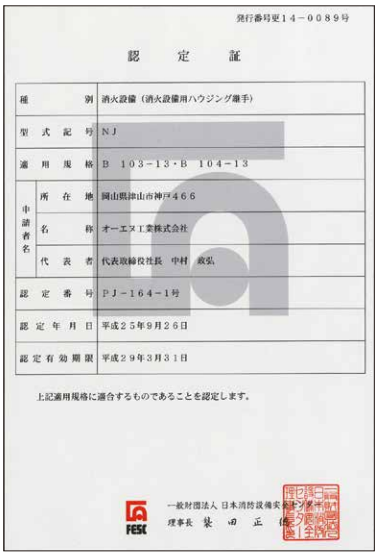
ステンレス協会規格合格認定証書

ステンレス協会規格の審査規定により下記のように認定する

平成27年5月28日
ステンレス協会
会長 西馬孝文
ステンレス協会規格認定委員会
委員長 小関敏彦

記

事業場名称　オーエヌエ業株式会社
所在地　岡山県津山市神戸466
認定規格名称　SAS322一般配管用ステンレス鋼鋼管の管継手性能基準
接合方式　拡管式
継手名称　拡管式管継手(ナイスジョイント)
呼び方　75～100 Su
種類　詳細は別紙による
呼び圧力　2MPa
登録年月日　平成27年6月11日
認定期間　登録年月日から5年間



発行番号更14－0089号

認定証

種別		消火設備（消火設備用ハウジング継手）
型式記号		NJ
適用規格		B 103－13・B 104－13
申請者名	所在地	岡山県津山市神戸466
	名称	オーエヌエ業株式会社
	代表者	代表取締役社長 中村 政弘
認定番号		PJ－164－1号
認定年月日		平成25年9月26日
認定有効期限		平成29年3月31日

上記適用規格に適合するものであることを認定します。

FESC

一般財団法人 日本消防設備安全センター
理事長 桑田正信

(1) Nominal size: 13 Su ~ 60 Su
Certification No.: SAS 32206
Connection type: Enlarging type

(2) Nominal size: 75 Su ~ 100 Su
Certification No.: SAS 32221
Connection type: Enlarging type

(5) Products approved by the Japan Water Works Association

Registered No.: G-246 G-248 E-505　Nominal size: 13 Su ~ 100 Su

(6) Listed in the Common Specifications for Mechanical Facilities Construction issued by the Ministry of Land, Infrastructure, Transport and Tourism

(7) Conforming to JIS S 3200-1 “Equipment for water supply service - Test methods of effects on water quality”

(1) Scope of usage

Can be used for cold water supply, hot water supply, cooling water supply, hot and cold water supply, air pipes, condensate return pipes, high-temperature water supply pipes and fire extinguishing pipes. See the Water Quality Standards for Tap Water ("Piping Manual for Stainless Steel Pipes for Buildings" issued by the Japan Stainless Steel Association in March 2011) for available water quality. (See the O.N.Fitting Installation Manual for the application areas of SUS 304 and SUS 316)

(2) Temperature, pressure, flow rate

Temperature: -15°C ~ 100°C (when using HNBR) *NJSR specialized fluorine rubber is recommended for high-temperature water of 80°C or higher. The heat resistance temperature of insulating union NJIU-S (for SGP & SUS) is 100°C, that of NJIU-V (for SGP-VA & SUS) is 40°C, and NJIU-H (for SGP-HVA & SUS) is 85°C.

Pressure: 1.0 MPa (10K) or less and 2.0 MPa (20K) or less
Pressure, 1.0 MPa (10K) or less and 2.0 MPa (20K) or less is available according to the product. Please see the Dimensions of O.N.Fitting for (10K) and (20K)

Flow rate: 3.5 m/s or less (Consider cavitation)

(3) TFitting and valve material (insulating unions excluded)

JIS G 5121 Corrosion resistant cast steels for general applications SCS 13, SCS 14
JIS G 4303Stainless steel bars SUS 304, SUS 316
*See the Product Information for the manufacturing types of SCS 14 (SUS 316).

(4) Rubber packing material and kinds

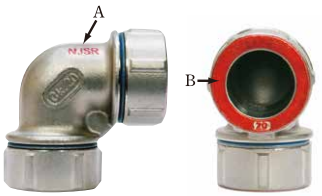
	Standard product	Specialized product(Please check the delivery date)
Front (pipe side)		
Back (joint side)		
Material	HNBR Nitrile hydroxide rubber [Number of ISO standard: 1629]	NJSR (FKM) Specialized fluorine rubber
Nominal size	13 Su ~ 100 Su	13 Su ~ 100 Su
Applications	Cold water supply, hot water supply, hot and cold water supply, cooling water pipes, air pipes etc.	Condensate return pipes, high-temperature water pipes
Temperature	-15°C ~ 100°C	MAX 180°C
Appearance	Black	Black (white mark on the joint-side surface; protrusion on the rim)

*Please identify HNBR or NJSR (FKM) by appearance.
Parts lists containing the material of relevant rubber packing will be shipped together with products.
*Using long-lasting NJSR (FKM) specialized fluorine rubber is recommended for high-temperature water of 80°C or higher.
*See the durable period of O.N.Fitting (life expectancy).

*Rubber packing for condensate return pipes is sold together with fittings as a set.

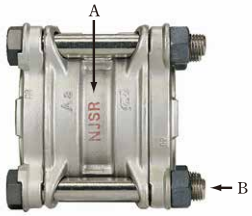
■13Su～60Su

A*The main body of a fitting has red **NJSR** marks on both the front and back sides.
B*The end face of a cap nut is marked with **red**.



■75Su～100Su

A※Mark "**NJSR**"(red color) on both sides of the fitting main body
B※You can see **black colored** head of bolts and nuts



(5) Scope of applicable pipes

Light gauge stainless steel pipes for ordinary piping JIS G 3448
Stainless steel pipes for water service JWWA G 115

(6) Degreased and cleansed products

Degreased and cleansed O.N.Fitting fittings and valves are manufactured separately.

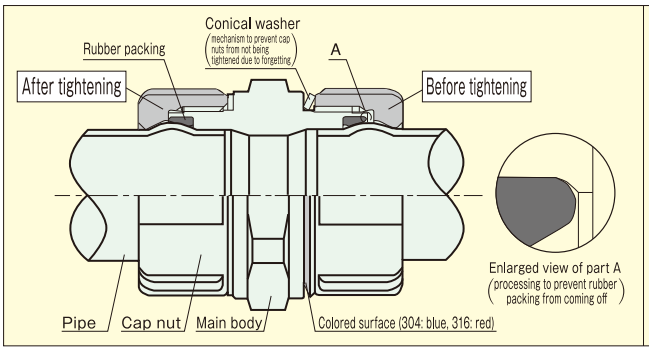
⚠ Safety Precautions When you use our products under conditions other than those specified above, please consult us in advance. Be sure to read the Installation Manual before installation.

◆Pipe cutting lower limit when installing elbows

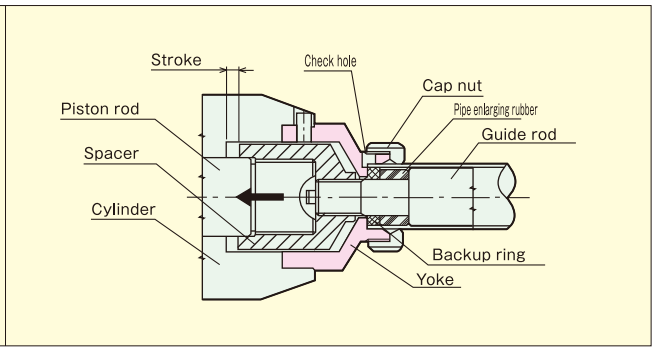
Unit: mm

Nominal size	13Su	20Su	25Su	30Su	40Su	50Su	60Su	75Su	80Su	100Su
Minimum length	35	38	42	50	60	68	82	199	217	243
Wick to wick dimensions for 90° elbow	81	87	104	118	136	150	171	330	370	428

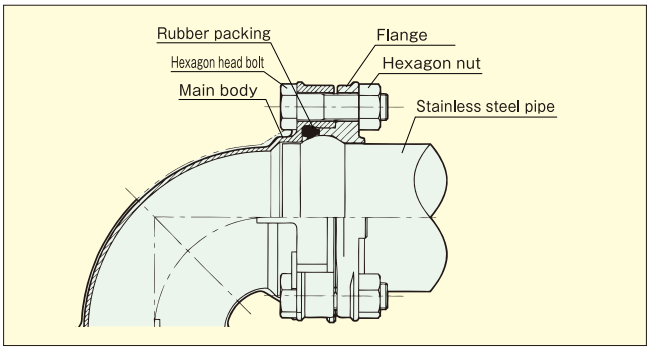
◆Structure of connecting section (13 ~ 60 Su)



◆Pipe enlarging principlewhen installing elbows



◆Fitting structure (75 ~ 100 Su)



Structure: A cap nut and flange are mounted to the expanded pipe end, connected to the fitting. Rubber packing is inserted into a triangular chamber surrounded by the fitting and pipe to seal out liquid.
Pipe enlarging principle: Expanding pipe rubber is inserted into the pipe, and a compressed load is applied in the axis (arrow) direction with oil pressure. The pipe is enlarged by a force where the enlarging pipe rubber expands in the circumferential direction.

◆Features

(1) High level of hygiene

Stainless steel, free from red water generation due to iron corrosion and blue water generation due to copper ion elution, is used.

(2) Light, enabling easy transportation and installation

Having a high corrosion resistance, the O.N.Fitting system does not require a "margin for corrosion." Moreover, since it has high strength, it can decrease wall thickness. Weighing only about one-third the weight of a carbon steel pipe, it is easy to transport and install.

(3) Speedy pipe expansion

When compared to threading, pipe expansion can be done in a much shorter time.

(4) Unique pipe expansion structure

1) Having a design that is highly resistant to tensile and bending load and earthquakes, this structure enables changes of layout and disassembling and reuse of joints.

2) The tightening condition of the cap nuts can be checked visually to prevent them from not being tightened due to forgetting.

3) You need not worry about pipes coming off.
*Pipes will be expanded in a convex shape and cap nuts are used to prevent them coming off.

4) When pipes are expanded, the tolerance of the pipe will be corrected and uniform compressibility of rubber packing can be achieved.
*Pipes have a tolerance of about 1%, and pipe sizes differ slightly.
*The pipe expansion process will decrease the tolerance to 0.2 mm or less and correct slight oval distortion.

(5) No need for flames or oil

Since flames are not required in installing and repair work, this system ensures safe operations. In addition, since piping can be performed without using oil for the joint pipe, washing can be reduced dramatically.

(6) Gentle to the environment, long-lasting and economical stainless steel

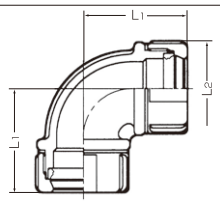
Stainless steel is the most appropriate material for recycling, and stainless steel pipes have a long life span (life expectancy) that is almost equal to the life span of buildings.

◆Dimensions Nominal size is expressed in Su.

Unit: mm

NJ90E 90° Elbow

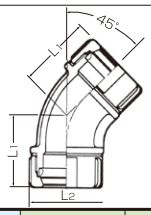
304・316 (20K)



Nominal size	L1	L2
13	36	31
20	39	36
25	47	46
30	53	53
40	61	63
50	67	71
60	76	86

NJ45E 45° Elbow

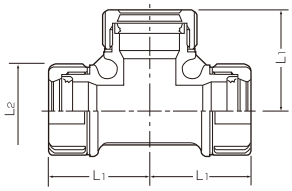
304・316 (20K)



Nominal size	L1	L2
13	32	31
20	34	36
25	35	46
30	37	53
40	42	63
50	47	71
60	61	86

NJT Tee

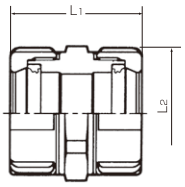
304・316 (20K)



Nominal size	L1	L2
13	36	31
20	39	36
25	47	46
30	53	53
40	61	63
50	67	71
60	76	86

NJS Socket

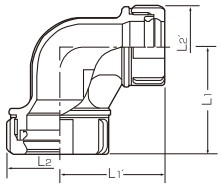
304・316 (20K)



Nominal size	L1	L2
13	40	31
20	44	36
25	46	46
30	52	53
40	56	63
50	62	71
60	70	86

NJRE Reducing Elbow

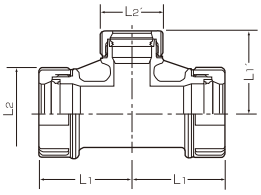
304 (20K)



Nominal size	L1	L1'	L2	L2'
20×13	39	36	36	31
25×13	—	—	—	—
25×20	47	46	46	36
30×13	—	—	—	—
30×20	—	—	—	—
30×25	53	47	53	46
40×13	—	—	—	—
40×20	—	—	—	—
40×25	—	—	—	—
40×30	61	53	63	53
50×13	—	—	—	—
50×20	—	—	—	—
50×25	—	—	—	—
50×30	—	—	—	—
50×40	67	66	71	63
60×20	—	—	—	—
60×25	—	—	—	—
60×30	—	—	—	—
60×40	—	—	—	—
60×50	76	72	86	71

NJRT Reducing Tee

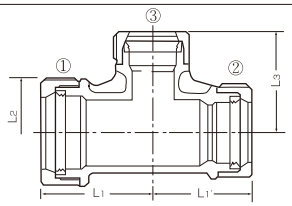
304・316 (20K)



Nominal size	L1	L1'	L2	L2'
20×13	39	36	36	31
25×13	47	42	46	31
25×20	47	46	46	36
30×13	53	46	53	31
30×20	53	48	53	36
30×25	53	47	53	46
40×13	61	51	63	31
40×20	61	53	63	36
40×25	61	54	63	46
40×30	61	53	63	53
50×13	67	55	71	31
50×20	67	57	71	36
50×25	67	58	71	46
50×30	67	61	71	53
50×40	67	66	71	63
60×20	76	64	86	36
60×25	76	66	86	46
60×30	76	68	86	53
60×40	76	70	86	63
60×50	76	72	86	71

NJ3RT Banded Reducing Tee

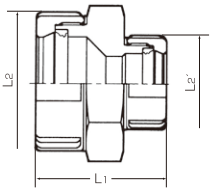
304 (20K)



Nominal size (①×②×③)	L1	L1'	L2	L3
—	—	—	—	—
—	—	—	—	—
25×20×20	47	39	46	46
—	—	—	—	—
30×25×20	53	47	53	48
30×25×25	53	47	53	47
	—	—	—	—
40×30×20	61	53	63	53
40×30×25	61	53	63	54
—	—	—	—	—
—	—	—	—	—
50×40×20	67	61	71	57
50×40×25	67	61	71	58
—	—	—	—	—
—	—	—	—	—
60×50×20	76	67	86	64
60×50×25	76	67	86	66
—	—	—	—	—
—	—	—	—	—
—	—	—	—	—

NJRS Reducing Socket

304・316 (20K)



Nominal size	L1	L2	L2'
20×13	42	36	31
25×13	43	46	31
25×20	45	46	36
30×13	47	53	31
30×20	49	53	36
30×25	50	53	46
40×13	51	63	31
40×20	52	63	36
40×25	53	63	46
40×30	54	63	53
50×20	55	71	36
50×25	56	71	46
50×30	57	71	53
50×40	59	71	63
60×20	62	86	36
60×25	63	86	46
60×30	64	86	53
60×40	66	86	63
60×50	67	86	71

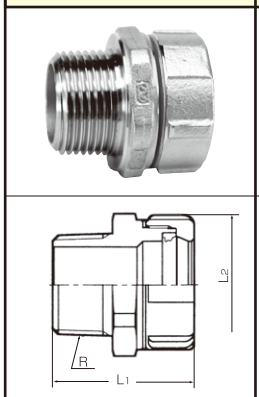
Products approved by the Japan Water Works Association are products made of SCS 14 (SUS 316)

◆Dimensions Nominal size is expressed in Su.

Unit: mm

NJMA Male Adapter

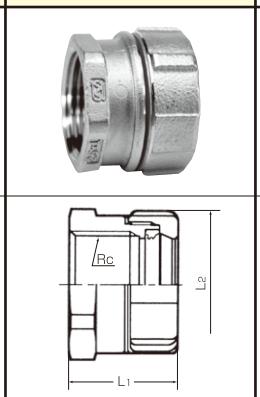
304・316 (20K)



Nominal size	L1	L2	R
13×½	40	31	½
20×½	42	36	½
20×¾	44	36	¾
25×1	47	46	1
30×1	51	53	1
30×1¼	53	53	1¼
40×1¼	55	63	1¼
40×1½	56	63	1½
50×1½	58	71	1½
50×2	62	71	2
60×2	66	86	2
60×2½	74	86	2½

NJFA Female Adapter

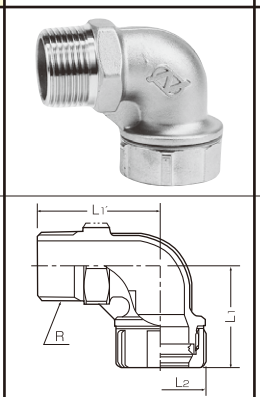
304・316 (20K)



Nominal size	L1	L2	Rc
13×½	29.5	31	½
20×½	32.5	36	½
20×¾	32.5	36	¾
25×1	34.5	46	1
30×1	36	53	1
30×1¼	41	53	1¼
40×1¼	42	63	1¼
40×1½	45	63	1½
50×1½	45	71	1½
50×2	53	71	2
60×2	54	86	2
60×2½	63	86	2½

NJEMA Male Adapter Elbow

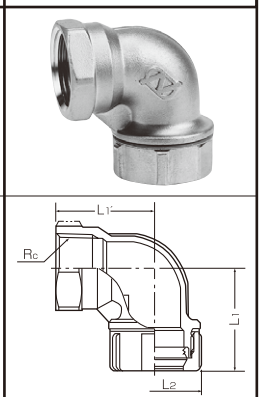
304 (20K)



Nominal size	L1	L1'	L2	R
20×½	37	45.5	36	½
20×¾	39	47.5	36	¾
25×1	47	54	46	1

NJEFA Female Adapter Elbow

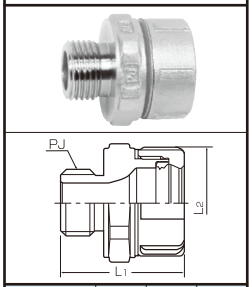
304 (20K)



Nominal size	L1	L1'	L2	Rc
20×½	36	36	36	½
20×¾	39	38	36	¾
25×1	47	43	46	1

NJMAPJ Male Adapter (PJ screw)

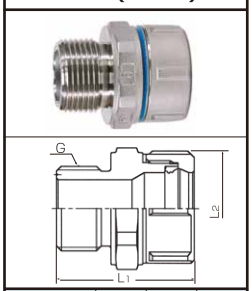
304 (10K)



Nominal size	L1	L2	PJ
20×½	40	36	½

NJMAG Male Adapter (G screw)

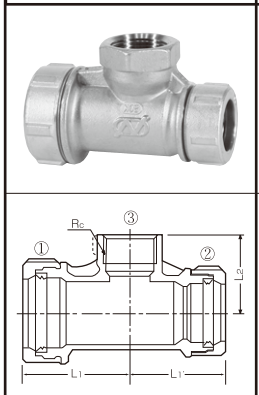
304 (10K)



Nominal size	L1	L2	G
20×G¾	43	36	¾

NJ3RTF Banded Reducing Tee with screws

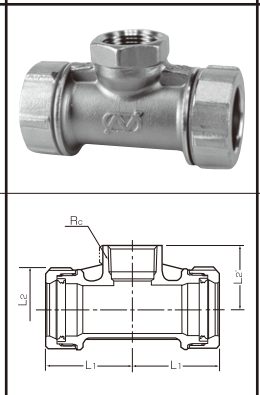
304 (20K)



Nominal size (①×②×③)	L1	L1'	L2	Rc
25×20×¾	47	39	35	¾
30×25×¾	53	47	39	¾
40×30×¾	61	53	44	¾
50×40×¾	67	61	48	¾
60×50×¾	76	67	56	¾

NJRTF Reducing Tee with screws

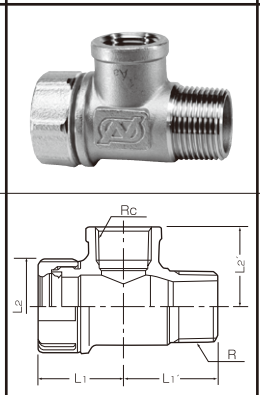
304 (20K)



Nominal size	L1	L2	L2'	Rc
20×20×½	39	36	30	½
20×20×¾	39	36	32	¾
25×25×¾	47	46	35	¾
30×30×¾	53	53	39	¾
40×40×¾	61	63	44	¾
50×50×¾	67	71	48	¾
60×60×¾	76	86	56	¾

NJRST Reducing Service Tee

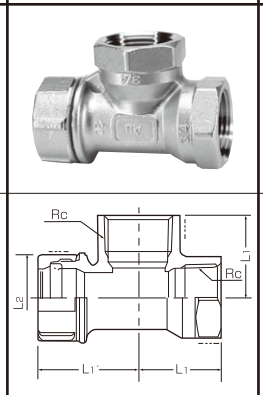
304 (20K)



Nominal size	L1	L1'	L2	L2'	Rc	R
20×¾×½	32	35	36	30	½	¾

NJFT Tee with female screws

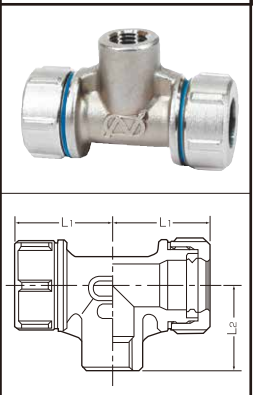
304 (20K)



Nominal size	L1	L1'	L2	Rc
20×¾×¾	32	39	36	¾

NJTS T-shaped screw

304



Nominal size	L1	L2
13×Rc1/8	32	27.8
13×Rc1/4	32	27.8
13×G1/4	32	27

Example of 304 (conical washer: blue)

Example of 316 (conical washer: red)

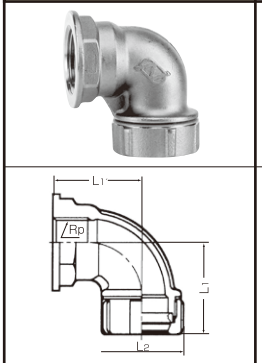
Products approved by the Japan Water Works Association are products made of SCS 14 (SUS 316)

◆Dimensions Nominal size is expressed in Su.

Unit: mm

NJWE Faucet Elbow

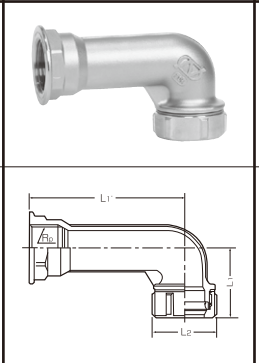
304・316 (20K)



Nominal size	L1	L1′	L2	Rp
13×½	36	35	31	½
20×½	39	38	36	½
20×¾	39	38	36	¾
25×½	—	—	—	—
25×1	47	43	46	1

NJWLE Long Faucet Elbow

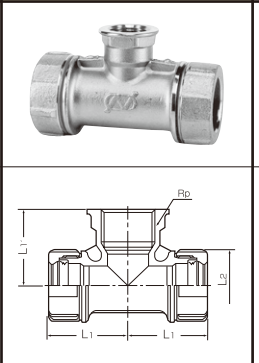
304 (20K)



Nominal size	L1	L1′	L2	Rp
13×½	36	85	31	½
20×½	39	88	36	½
20×¾	39	88	36	¾
25×½	—	—	—	—
25×1	47	93	46	1

NJWT Faucet Tee

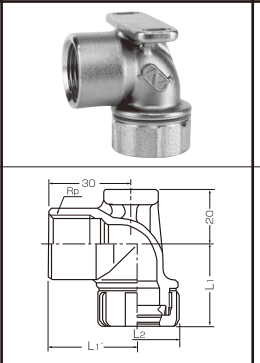
304・316 (20K)



Nominal size	L1	L1′	L2	Rp
13×½	36	35	31	½
20×½	39	38	36	½
20×¾	39	38	36	¾
25×½	47	38	46	½
25×1	—	—	—	—

NJZWEU Faucet Elbow with Upper Plate

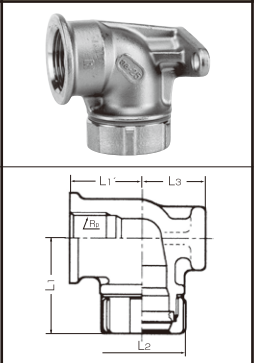
304 (20K)



Nominal size	L1	L1′	L2	Rp
13×½	30	32.5	31	½
20×½	35	35	36	½
20×¾	35	35	36	¾
25×½	—	—	—	—
25×1	—	—	—	—

NJZWES Faucet Elbow with Side Plate

304・316 (20K)

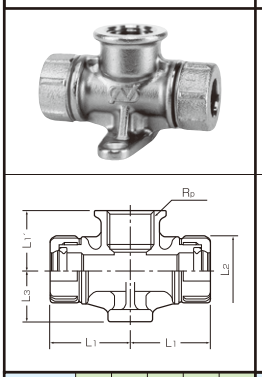


Nominal size	L1	L1′	L2	L3	Rp
13×½	36	27	31	23	½
20×½	39	30	36	26	½
20×¾	39	30	36	26	¾
25×½	—	—	—	—	—
25×1	47	38	46	31	1

Only 304 is certified by the Japan Water Works Association.

NJZWTS Faucet Tee with Plate

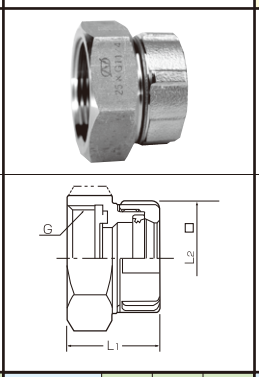
304 (20K)



Nominal size	L1	L1′	L2	L3	Rp
13×½	36	27	31	23	½
20×½	39	30	36	26	½
20×¾	39	32	36	26	¾
25×½	47	38	46	31	½

NJMS Meter Socket

304 (20K)

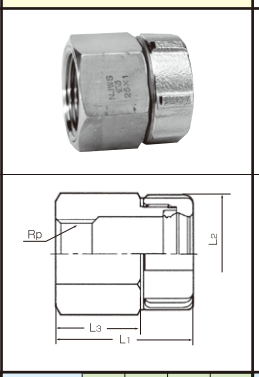


Nominal size	L1	L2	G
20×G1	35	36	1
25×G1¼	37	46	1¼

Can be connected to parallel screws for pipes JIS B 0202.

NJWS Faucet Socket

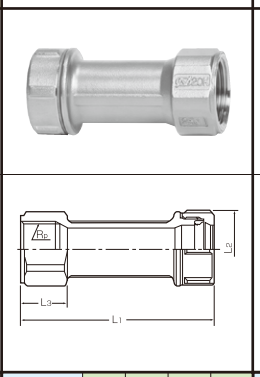
304・316 (20K)



Nominal size	L1	L2	L3	Rp
13×½	40	31	26	½
20×½	42	36	26	½
20×¾	42	36	26	¾
25×1	43	46	26	1

NJWLS Long Faucet Socket

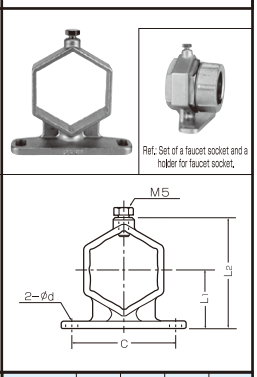
304 (20K)



Nominal size	L1	L2	L3	Rp
13×½	90	31	22	½
20×½	92	36	22	½
20×¾	92	36	22	¾
25×1	93	46	22	1

NJWH Holder for Long Faucet Socket

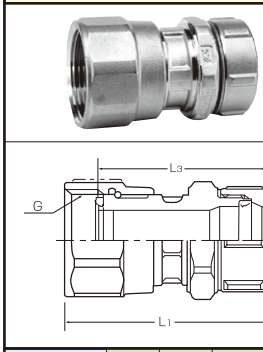
304



Nominal size	L1	L2	C	d
13・20	28	53	50	5.5
25	34	65	60	6.2

NJMU Meter Union

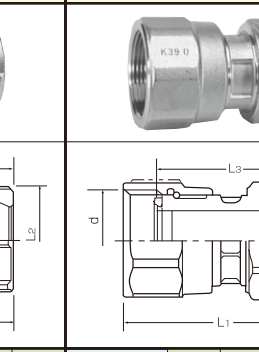
316 (20K)



Nominal size	L1	L2	L3	G
20×G1	66.5	36	55.5	1
25×G1¼	77	46	63	1¼

NJMUK Meter Union (for Kimmon screws)

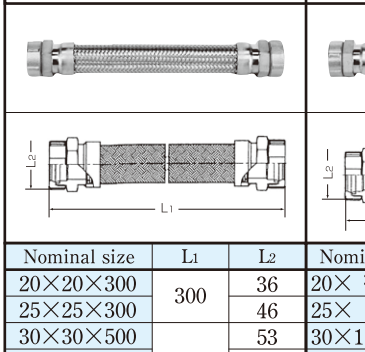
316 (20K)



Nominal size	L1	L2	L3	d (Kimmon screw)
20×33.0	66	36	55.5	33.0
25×39.0	76.5	46	63	39.0

NJFL Flexible Joint

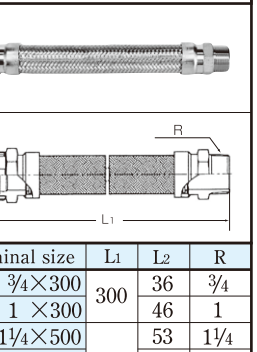
304 (10K)



Nominal size	L1	L2
20×20×300	300	36
25×25×300		46
30×30×500	500	53
40×40×500		63
50×50×500		71
60×60×500		86

NJFLMA Flexible Joint

304 (10K)



Nominal size	L1	L2	R
20× ¾×300	300	36	¾
25× 1 ×300		46	1
30×1¼×500	500	53	1¼
40×1½×500		63	1½
50× 2 ×500		71	2
60×2½×500		86	2½

*The gaskets on the meter-side of NJMS, NJMU, NJMUK are specifically designed products. Other gaskets that may be attached to meters cannot be used since they are not compatible with gaskets other than the specifically designed ones.

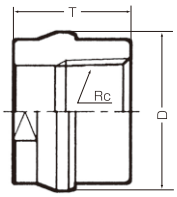
Products approved by the Japan Water Works Association are products made of SCS 14 (SUS 316)

◆Dimensions Nominal size is expressed in Su.

Unit: mm

NJB Bush

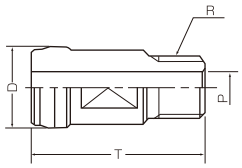
304 (20K)



Nominal size	D	T	Rc
25×½	31.5	23.5	½
30×½	37.5	25	½
30×¾	37.5	25	¾
40×½	47.1	28.5	½
40×¾	47.1	28.5	¾
40×1	47.1	28.5	1
50×½	53.6	31.5	½
50×¾	53.6	31.5	¾
50×1	53.6	31.5	1
60×½	66.7	38	½
60×¾	66.7	38	¾
60×1	66.7	38	1
60×1¼	66.7	38	1¼

NJNS Adapter with male screws

304



Nominal size	D	T	P	R
13×R¼	17.5	37	7	¼

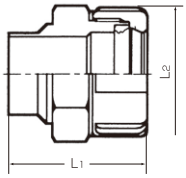
NJC Cap

304 (20K)

Nominal size	D	T
13	17.5	8.0
20	24.5	8.5
25	31.5	10.0
30	37.5	10.0
40	47.1	11.5
50	53.6	12.0
60	66.7	14.5

NJYA Welding Adapter

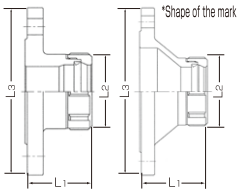
304 (20K)



Nominal size	L1	L2
13	36	31
20	38	36
25	41	46
30	43	53
40	47	63
50	50	71
60	57	86

NJFM Flange Adapter (JIS 10K)

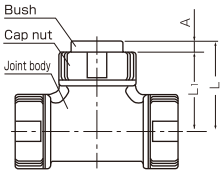
304・316 (10K)



Nominal size Su×A	L1	L2	L3
13×15	44	31	95
20×15	48	36	95
20×20	48	36	100
25×25	52	46	125
30×25	56	53	125
30×32	56	53	135
40×32	58	63	135
40×40	58	63	140
50×40	61	71	140
50×50	61	71	155
※50×65	70	71	175
※50×80	75	71	185
※50×100	82	71	210
60×50	66	86	155
60×65	66	86	175
※60×80	79	86	185
※60×100	84	86	210

Nominal size A	Bolt diameter (ref.)
15	M12×40
20	M12×45
25	M16×50
32	M16×55
40	M16×55
50	M16×55
65	M16×60
80	M16×60
100	M16×60

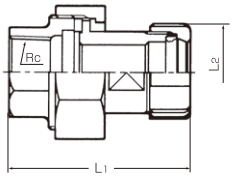
Bush joint diameter list



Nominal size	A	L1	L
25	7.5	47	54.5
30	7	53	60
40	6	61	67
50	7	67	74
60	8	76	84

NJIU-S Insulating Union

(SGP&SUS用) 304 (10K)

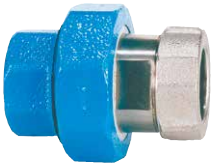


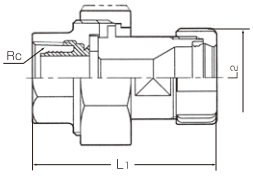
Nominal size	L1	L2	Rc
13×½	61	31	½
20×¾	68	36	¾
25×1	72	46	1
30×1¼	88	53	1¼
40×1½	94	63	1½
50×2	106	71	2
60×2½	125	86	2½

Heat resistant temperature: 100°C

NJIU-V Insulating Union

(SGP−VA&SUS用) 304 (10K)



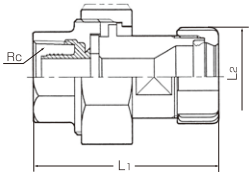


Nominal size	L1	L2	Rc
13×½	64	31	½
20×¾	70	36	¾
25×1	75	46	1
30×1¼	92	53	1¼
40×1½	96	63	1½
50×2	108	71	2

Heat resistant temperature: 40°C

NJIU-H Insulating Union

(SGP−HVA&SUS用) 304 (10K)

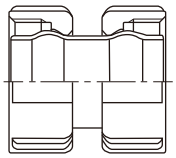


Nominal size	L1	L2	Rc
13×½	64	31	½
20×¾	70	36	¾
25×1	75	46	1
30×1¼	92	53	1¼
40×1½	96	63	1½
50×2	108	71	2
60×2½	129	86	2½

Heat resistant temperature: 85°C

NJSP Short Pipe with cap nuts

304 (20K)



Nominal size	Pipe cutting dimensions
13×34	35
20×37	38
25×41	42
30×48	50
40×58	60
50×65	68
60×79	82

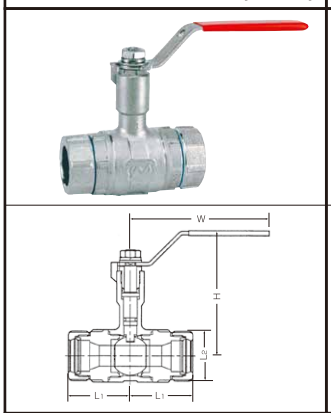
Products approved by the Japan Water Works Association are products made of SCS 14 (SUS 316)

◆Dimensions Nominal size is expressed in Su.

Unit: mm

NJ-200 Long Neck Ball

(Reduced bore) 304 (20K)

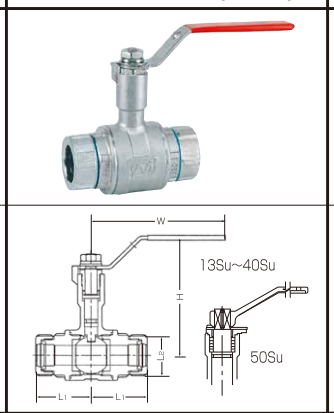


Nominal size	L1	L2	H	W
13	39.0	31	87	100
20	45.0	36	91	100
25	48.5	46	101	130
30	49.5	53	101	130
40	54.0	63	104	130
50	62.5	71	119	170
60	69.5	86	125	170

Butterfly handle type is also available for 30 Su and smaller series.

NJ-220 Long Neck Ball

(Full bore) 304 (20K)

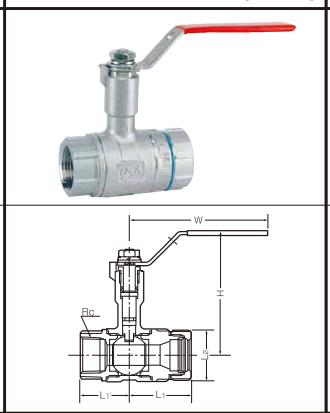


Nominal size	L1	L2	H	W
13	41.5	31	91	100
20	47.5	36	101	130
25	49.5	46	104	130
30	57.0	53	119	170
40	62.5	63	125	170
50	67.5	71	156	230

Butterfly handle type is also available for 20 Su and below. Only the handle of 50 Su is removable.

NJ-202NF Long Neck Ball

(Reduced bore) 304 (20K)

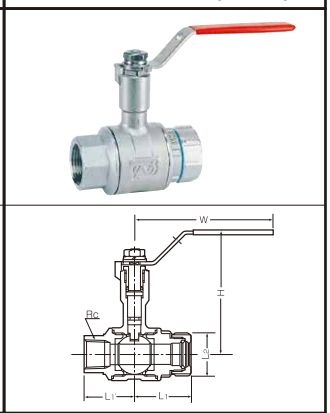


Nominal size	L1	L1′	L2	H	W	Rc
20×3/4	45	35	36	91	100	3/4
25×1	48.5	40	46	101	130	1

Butterfly handle is also available.

NJ-222NF Long Neck Ball

(Full bore) 304 (20K)

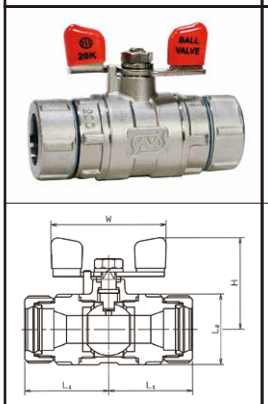


Nominal size	L1	L1′	L2	H	W	Rc
20×3/4	47.5	41	36	101	130	3/4
25×1	49.5	46	46	104	130	1

Butterfly handle is also available for 20 Su.

NJ-310

(Reduced bore) 304 (20K)

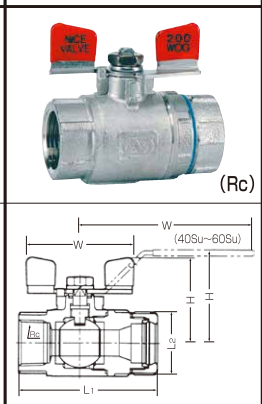


Nominal size	L1	L2	H	W
13	39.0	31	46	60
20	45.0	36	50	60
25	48.5	46	58	80

Lever handle is also available.

NJ-610 Mini Ball

(Reduced bore) 304 (20K)

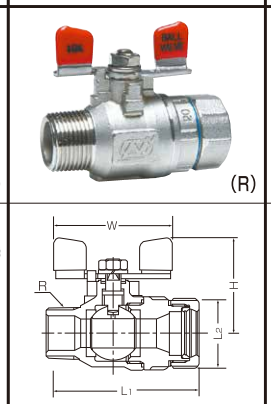


Nominal size	L1	L2	H	Rc	W
13×1/2	69	31	46	1/2	60
20×3/4	80	36	50	3/4	60
25×1	88.5	46	58	1	80
30×1	89.5	53	58	1	80
40×1 1/4	99	63	68	1 1/4	130
50×1 1/2	112.5	71	96	1 1/2	170
60×2	129.5	86	102	2	170

40 Su and larger series have a lever handle.

NJ-611 Mini Ball

(Reduced bore) 304 (20K)

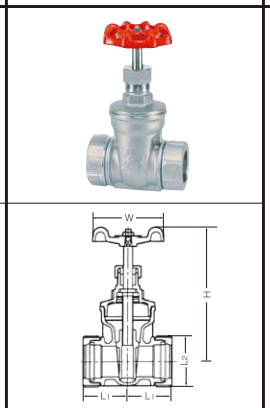


Nominal size	L1	L2	H	R	W
20×3/4	80	36	50	3/4	60

Lever handle is also available.

NJ-670 Gate Valve

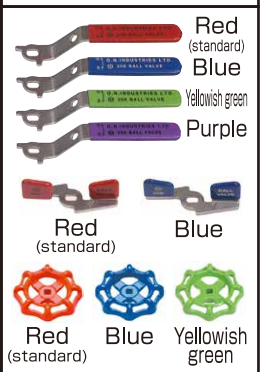
(Full bore) 304 (20K)



Nominal size	L1	L2	H	W
13	34.0	31	112	60
20	38.0	36	115	60
25	41.0	46	122	60
30	47.0	53	143	75
40	54.0	63	155	75
50	60.0	71	182	95
60	67.0	86	195	95

※2

Valve Color Handle for O.N.Fitting



They will be manufactured on a per-order basis.
Please contact us if you want to know the delivery time.
Standard handles are red.
(Handles of NJ-220 50 Su are cast by a lost-wax method, and color handles are not available for them)

*1 Valves for O.N.Fitting are compatible with JV8-1: 2007, Stainless Steel Valves for Ordinary Piping, Japan Valve Manufacturers' Association Standards. The maximum acceptable pressure is 2.0 MPa or lower.
They are listed in the Common Specifications for Mechanical Facility Construction issued by the Ministry of Land, Infrastructure, Transport and Tourism (Machines and Equipment Construction).

*2 Gate valves are tested by the testing method specified in JV8-1 to check for leakage before shipment. However, the use of ball valves is recommended for positions where water may leak out due to waste in pipes (where leakage must not occur).

Products approved by the Japan Water Works Association are products made of SCS 14 (SUS 316)

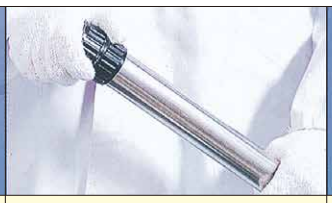
◆Cautions in piping work

1. Always keep in mind that the pipe is thin.
2. Carefully perform cutting and chamfering.
3. Mount the enlarging pipe machine parts correctly.
4. When enlarging the pipe, insert the pipe correctly.
5. Keep the correct pipe enlarging amount.
6. Do not forget rubber packing.
7. Tighten the cap nut completely.
8. Do not apply an excessive piping stress.
9. Be sure to take measures against corrosion and freezing.
10. Fix the support securely.

*Please connect the next process with the extension of piping after completely tightening cap nut.

◆Operation procedures (13 ~ 60 Su)

(1) Referring to the pipe cutting dimension table, cut the pipe at a right angle to the axis core with a metal saw or band saw.



(2) Carefully remove burrs from both the inner and outer chamfered surfaces carefully using a reamer, sandpaper, and grinder.

(3) Mount the cap nut to the yoke.

(4) Insert the pipe into the guide rod completely.

(5) When pipe enlarging is completed, the sound from the hydraulic pump changes due to load applied to the pump, a buzzer sounds, and the lamp lights.

(6) Insert the enlarged pipe into the joint, and mount the cap nut.

(7) In a case where the rubber packing has dropped, be sure to mount it to the joint.

(8) Mount the conical washer to a section where the cap nut side surface comes in contact with the joint, and tighten the nut until the colored surface is not clearly visible.

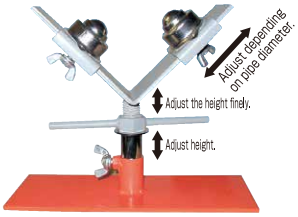
◆Cutting machine for stainless steel pipes 122J-S (13Su~60Su)

Specification for cutting machine for stainless steel pipes **122J-S**

Specification

Electrical requirement	AC100V 50/60Hz
Rated current	6.0A
Weight	22.7kg
Application	13Su～60Su

Pipe support for 122J-S
(extra-cost option)



Cutting

Removal of burrs

*Please read through the instruction manual carefully for details about the handling of the cutting machine and the exchange of parts.

◆Characteristics of the cutting machine for stainless steel pipes

Adopting an improved cutting method, this machine has achieved ideal cutting with fewer burrs.
With a sharp cut end, this machine is suitable for O.N.Fitting systems.
This is a new generation cutting machine that can be also used as a burr remover.

1. A system that will not cause burrs on outside surfaces
   (Remove burrs on the inner surface thoroughly with a reamer)
2. Right angle cut surface
3. No fire or cutting chips
4. Speedy
5. Low-cost cutting
6. Sharp cutting

(e.g.) Cut surfaces of 20 Su 500

After burrs are removed with a reamer

Burrs are not removed.

NE3-Type

Rechargeable pipe expansion machine 13 ~ 25 Su

Electrical requirement	DC14.4V	
Motor capacity	280W	
Discharge pressure	68MPa	
Weight	Main body	4.7kg
	Set of attachment	3.1kg

NE4-Type

Separate-type pipe expansion machine 13 ~ 60 Su

Electrical requirement	AC100V 50／60Hz	
Motor capacity	400W	
Discharge pressure	70MPa	
Weight	Main body	18kg
	Set of attachment	11.3kg

NE5-Type

Integral-type pipe extension machine 13 ~ 60 Su

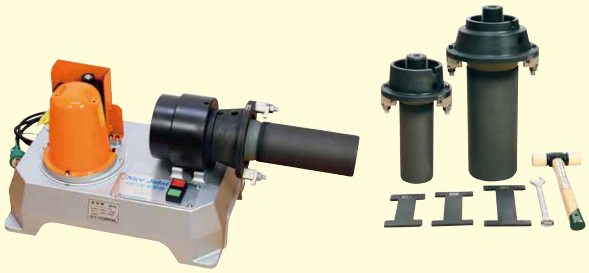
Electrical requirement	AC100V 50／60Hz	
Motor capacity	400W	
Discharge pressure	70MPa	
Weight	Main body	23kg
	Set of attachment	11.3kg

NE5W-Type

Integral-type pipe extension machine 13 ~ 60 Su

Electrical requirement	AC100V 50／60Hz	
Motor capacity	650W	
Discharge pressure	70MPa	
Weight	Main body	31kg
	Set of attachment	11.3kg

NE7-Type



Pipe expansion machine 75 ~ 100 Su

Electrical requirement	AC100V 50／60Hz	
Motor capacity	400W	
Discharge pressure	70MPa	
Weight	Main body	29.3kg
	Set of attachment	25.6kg

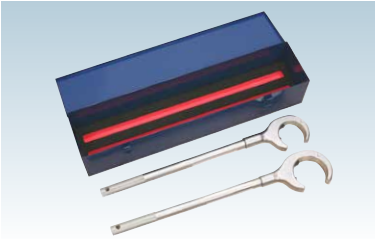
⚠ Warning: Machines designed exclusively for O.N.Fitting systems.

1. Using these machines for the expansion of mechanical joints other than O.N.Fitting will cause trouble.
2. Expanding tubes with pipe enlarging machines other than the dedicated ones will affect the performance of O.N.Fitting.

◆Nice Wrench (exclusively for 50 Su/60 Su)

A dedicated tightening tool (ratchet wrench) has been developed to achieve more effective tightening of cap nuts.

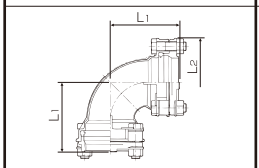
■ Length: 600 L



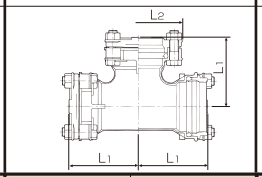
◆Dimensions (75~100Su) SCS13 (SUS304) Nominal size is expressed in Su.

Unit: mm

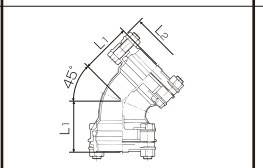
NJLE 90° Elbow — 304 (20K)



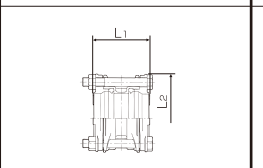
NJLT Tee — 304 (20K)



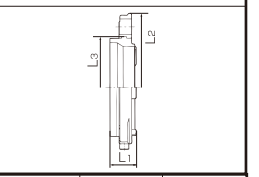
NJL 45E 45° ° Elbow — 304 (20K)



NJLS Socket — 304 (20K)



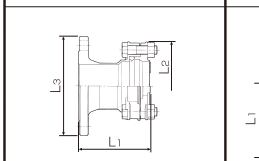
NJLPF Through Flange — 304 (20K)



Nominal size	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2	L3
75	110.5	150	110.5	150	80.5	150	90	150	23	150	98
80	129	164	129	164	94	164	106	164	29	164	112
100	158	195	158	195	110	195	132	195	37.6	195	142.5

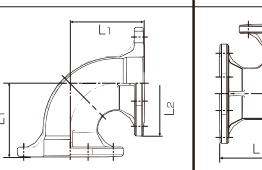
NJLFM Flange Adapter — 304 (20K)

Can be connected to JIS 10K
93-3. Parts for 20 K will be also manufactured.



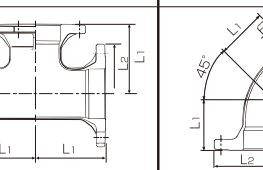
NJLE-B F-type 90° ° Elbow — 304 (20K)

Can be connected to JIS 10K



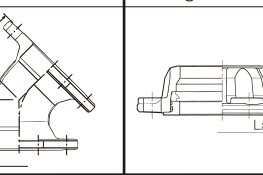
NJLT-B F-type Tee — 304 (20K)

Can be connected to JIS 10K

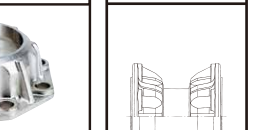


NJL 45E-B F-type 45° Elbow — 304 (20K)

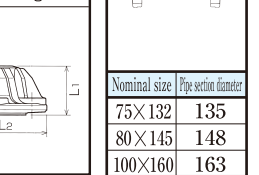
Can be connected to JIS 10K



NJLF F-type Flange — 304 (20K)



Can be connected to JIS 10K
With ring B and rubber gasket

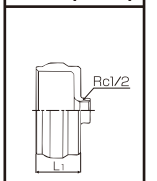


Nominal size	L1	L2	L3	L1	L2 (Max)	L1	L2 (Max)	L1	L2 (Max)	L1	L2 (Max)
75×65A	125.5	150	175	104	172	104	172	70	172	43	172
80×80A	134	164	185	119	182	119	182	75	182	52	182
100×100A	148	195	210	131	207	131	207	80	207	66	207
100×125A	158	195	250	—	—	—	—	—	—	—	—

Short pipe with flange (NJLFSP) — 304 (20K)

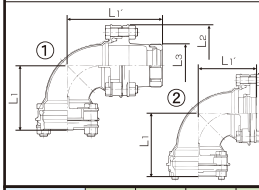
Nominal size	Pipe section diameter
75×132	135
80×145	148
100×160	163

NJLB Bush — 304 (20K)

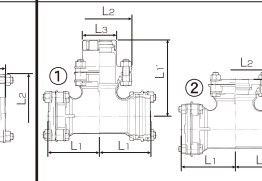


Nominal size	L1
75×1/2	49.5
80×1/2	55.5
100×1/2	68.0

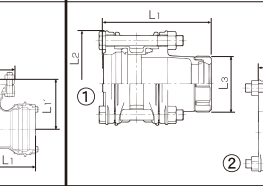
NJLRE Reducing Elbow — 304 (20K)



NJLRT Reducing Tee — 304 (20K)

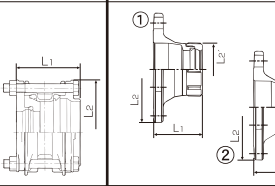


NJLRS Reducing Socket — 304 (20K)



NJLRF Reduced Flange — 304 (20K)

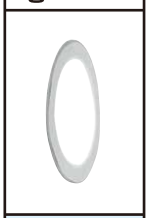
Can be connected to JIS 10K



①Nominal size	L1	L1'	L2	L3	L1	L1'	L2	L3	L1	L2	L3	L1	L2 (Max)	L2' (Max)
75×50	110.5	173.5	150	71	110.5	173.5	150	71	153	150	71	70	172	71
75×60	110.5	175.5	150	86	110.5	175.5	150	86	155	150	86	66	172	86
80×50	129	189	164	71	129	189	164	71	166	164	71	75	182	71
80×60	129	191	164	86	129	191	164	86	168	164	86	79	182	86
100×50	158	210	195	71	158	210	195	71	184	195	71	82	207	71
100×60	158	212	195	86	158	212	195	86	186	195	86	84	207	86

②Nominal size	L1	L1'	L2	L1	L1'	L2	L1	L2	L1	L2 (Max)	L2' (Max)
80×75	129	135	164	129	135	164	111	164	105	182	172
100×75	158	149.5	195	158	149.5	195	123.5	195	112	207	172
100×80	158	150	195	158	150	195	124	195	112	207	182

Teflon coated gasket



Nominal size
75 (65A)
80 (80A)
100 (100A)

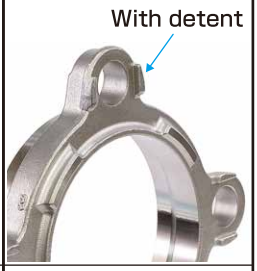
*Although the nominal pressure is 20K, the connecting diameter of flanges is JIS 10K.z
75Su=65A、80Su=80A、100Su=100A

*Please use Teflon coated flange gaskets, such as T#N 7030-N and V#N 9010-A-5
(Gaskets for metal flanges that can be tightened relatively firmly).

*How to use thorough flanges: See the catalog and installation manual. Use through flange B when expanding a pipe, and attach through flange A to B. Then, insert an elbow and socket.

Products approved by the Japan Water Works Association

◆Dimensions (75~100Su) SCS13 (SUS304) Nominal size is expressed in Su.

NJLNF Flange	NJLSF Flange for Sockets
304 (20K)	304 (20K)
	
Nominal size	Nominal size
75	75
80	80
100	100
Without detent	With detent

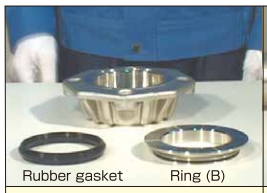
◆Operation procedures (75 ~ 100 Su)

				
(1) Cut the pipe with a metal saw or a band saw at the right angle to the shaft center of the pipe in accordance with the pipe cutting diameter list.	(2) Remove burrs from both the inner and outer surfaces of the pipe thoroughly with a reamer, a file or a grinder.	(3) Insert a flange in to the yoke and fix the flange with a retainer.	(4) Tighten and fix the hexagon nuts with the attached single-ended wrench.	(5) Insert the pipe into the yoke as far as it will go. (Note) Use a pipe stand and the like.
				
(6) When expanding the pipe, turn on the "operation" switch. Two seconds after the completion of the expansion, the motor will stop, and the guide rod will recover. The "emergency stop" should be used only in emergencies.	(7) Confirm that a rubber gasket is attached to the joint body, and connect the expanded pipe to the joint.	(8) *When exchanging rubber packing, attach the new gasket to the joint body with the side having a round protrusion at the end facing toward you.	(9) Install the attached hexagon head bolts and hexagon nuts.	(10) Tighten the bolts in a crisscross pattern until the flange surface comes into close contact with the joint body.

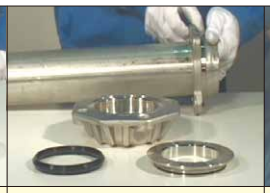
◆Through flange operation procedures

				
(1) Disassemble a through flange into through flanges A and B.	(2) Insert the through flange B to the yoke and fix it with a retainer. Tighten the hexagon nuts firmly with the attached single-ended wrench, and then expand the pipe.	(3) Insert the through flange B-side pipe into the sleeve.	(4) Attach through flange A to through flange B.	(5) Align the notch mark of through flange A with that of through flange B, and tighten firmly the attached hexagon bolts with a wrench.

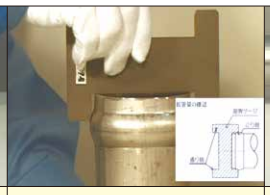
◆F-type flange operation procedures



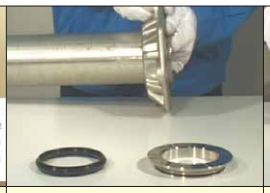
(1) Remove the components of F-type Flange.



(2) NE7-Type machine is not available for the expansion of F-type flanges. Use NE6 - K Type machine and dedicated attachment. After expanding the pipe in accordance with the procedures from (1) to (6), remove the flange.

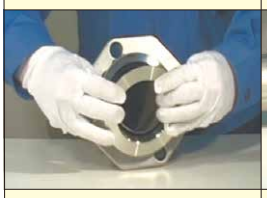


(3) Check the expansion amount: Press the notch of a go/no-go gauge against the end face of the pipe to check the go side and not-go side.



(4) Attach the F-type flange to the pipe expanded in the process of (2).

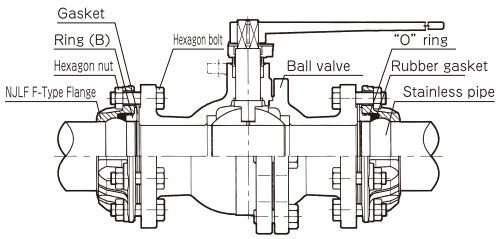
(5) Attach rubber packing to the F-type flange. Make sure that the side having a round protrusion on the end surface comes into contact with the flange side.



(6) Attach ring B. ("O" ring is packed as ring B to prevent falling over at the time of installation)

(7) Attach F-type flange to JIS 10K flange.

(8) Insert Teflon coated gaskets in JIS 10K flange and F-type flange, and tighten up the bolts. Use gasket for metals flanges.



Connection method to JIS 10K flange

*Short pipes with flange (NJLFSP) are also available.

◆Types of hexagon bolts and nuts

(Ref.) Hexagon bolts and nuts are contained in a set together with a joint.

Type	Nominal size (Su)	Bolt length (major diameter-side)	Bot length (small diameter side)
90° Elbow (NJLE)	75	M16 x 55L: 8 bolts	
	80	M16 x 55L: 8 bolts	
	100	M16 x 65L: 8 bolts	
Tee (NJLT)	75	M16 x 55L: 12 bolts	
	80	M16 x 55L: 12 bolts	
	100	M16 x 65L: 12 bolts	
45° Elbow (NJL45E)	75	M16 x 55L: 8 bolts	
	80	M16 x 55L: 8 bolts	
	100	M16 x 65L: 8 bolts	
Reducing elbow (NJLRE)	75×50	M16 x 55L: 4 bolts	M16 x 55L: 4 bolts
	75×60	M16 x 55L: 4 bolts	M16 x 55L: 4 bolts
	80×50	M16 x 55L: 4 bolts	M16 x 55L: 4 bolts
	80×60	M16 x 55L: 4 bolts	M16 x 55L: 4 bolts
	80×75	M16 x 55L: 4 bolts	M16 x 65L: 4 bolts
	100×50	M16 x 65L: 4 bolts	M16 x 65L: 4 bolts
	100×60	M16 x 65L: 4 bolts	M16 x 65L: 4 bolts
	100×75	M16 x 65L: 4 bolts	M16 x 65L: 4 bolts
	100×80	M16 x 65L: 4 bolts	M16 x 65L: 4 bolts
Reducing tee (NJLRT)	75×50	M16 x 55L: 8 bolts	M16 x 55L: 4 bolts
	75×60	M16 x 55L: 8 bolts	M16 x 55L: 4 bolts
	80×50	M16 x 55L: 8 bolts	M16 x 55L: 4 bolts
	80×60	M16 x 55L: 8 bolts	M16 x 55L: 4 bolts
	80×75	M16 x 55L: 8 bolts	M16 x 65L: 4 bolts
	100×50	M16 x 65L: 8 bolts	M16 x 65L: 4 bolts
	100×60	M16 x 65L: 8 bolts	M16 x 65L: 4 bolts
	100×75	M16 x 65L: 8 bolts	M16 x 65L: 4 bolts
	100×80	M16 x 65L: 8 bolts	M16 x 65L: 4 bolts

Type	Nominal size (Su)	Bolt length (major diameter-side)	Bot length (small diameter side)
Socket (NJLS)	75	M16 x 110L: 4 bolts	
	80	M16 x 120L: 4 bolts	
	100	M16 x 130L: 4 bolts	
Reducing Socket (NJLRS)	75×50	M16 x 110L: 4 bolts	
	75×60	M16 x 110L: 4 bolts	
	80×50	M16 x 120L: 4 bolts	
	80×60	M16 x 120L: 4 bolts	
	80×75	M16 x 140L: 4 bolts	
	100×50	M16 x 130L: 4 bolts	
	100×60	M16 x 130L: 4 bolts	
	100×75	M16 x 140L: 4 bolts	
	100×80	M16 x 140L: 4 bolts	
Flange Adapter (NJLFM)	75×65A	M16 x 55L: 4 bolts	
	80×80A	M16 x 55L: 4 bolts	
	100×100A	M16 x 65L: 4 bolts	
	100×125A	M16 x 65L: 4 bolts	

Type of hexagon bolts

M16×55L
M16×65L
M16×110L
M16×120L
M16×130L
M16×140L

Material

Hexagon Bolt : SUS304J3
Hexagon Nut : SUS304

Visual

Stndard	NJSR
	

◆Cautions in piping work

1. Always keep in mind that the pipe is thin.
2. Carefully perform cutting and chamfering.
3. Mount the enlarging pipe machine parts correctly.
4. When enlarging the pipe, insert the pipe correctly.
5. Keep the correct pipe enlarging amount.
6. Do not forget rubber packing.
7. Tighten the cap completely.
8. Do not apply an excessive piping stress.
9. Be sure to take measures against corrosion and freezing.
10. Fix the support securely.

*Please connect the next process with the extension of piping after completely tightening cap nut.

◆Introduction of specialized products

* They will be manufactured on a per-order basis. Please contact us for information on the delivery time.

1. Degreased and cleansed products

1) Dry air

*(The material of the rubber packing is NHBR)

Compressed air quality rank: Class 2 JIS B 8392-1 (oil content: approx. 0.1 mg/m3 or less)

2) Pure water

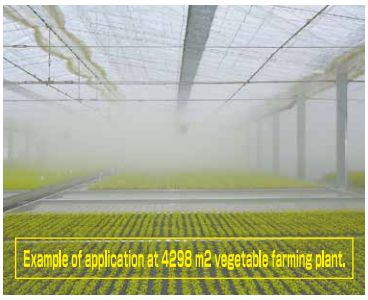
Please make your specifications known to us.

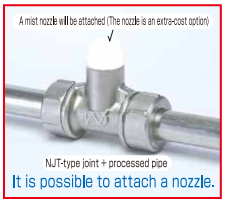
*RO water (The material of the rubber packing is HNBR)

*Ultrapure water (The material of the rubber packing is NJSR)

*They can be identified from standard products by a sticker of "Degreased"

2. 7MPa用 (13Su)





1) Repeated internal pressure test result - 10.5 MPa 100-thousand-cycle

Nominal size (Su)	Existence of troubles	Test condition	
		Test pressure	
13		0→10.5MPa→0	100,002 cycles

2) Burst pressure test result

Nominal size (Su)	Existence of troubles after 6.5 MPa is maintained for 10 min	Burst pressure (MPa)	Troubles
13	None	37	Coming off or leakage

3. Ozone water

Be sure to use specialized fluorine rubber packing (NJSR).
Please see technical materials (posted on our website) for the results of ozone resistance tests performed for various types of rubber.

Memo

We are seriously tackling the development of seismic-resistant products.

O.N. Fitting

After the Hanshin Awaji Earthquake, we visited sites where our products had been applied in Kobe, Nishinomiya, Ashiya, Arima and Awaji Island, including hotels, universities, banks and waste disposal plants, and confirmed that our products were safe.

JV8-1
13～60Su

*O.N.Fitting has achieved a total shipment of 33,000,000 items in December 2014.
*It has been verified that our products can stand earthquakes up to about level 7 by applying acceleration of 800 G to pipes.
*Condensate return pipes and pipes for high temperature water, "life expectancy is 27 years under 130°C" are on sale with great reviews.

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⚠ Safety precautions

Please read through the "Installation Manual" before use to secure appropriate use of the products listed in this catalog.

Installation explanation sessions for O.N.Fitting products are available.
*The explanations will be provided in accordance with the installation manual and operation procedures.
*If you handle our products for the first time, be sure to take an installation explanation session.
*Please apply for the session through the sales agent where you purchased the products.
*A technical training certificate or certificate of completion will be issued if you want.
*Please apply for the installation explanation session as early as possible.

VEGETABLE OIL INK
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